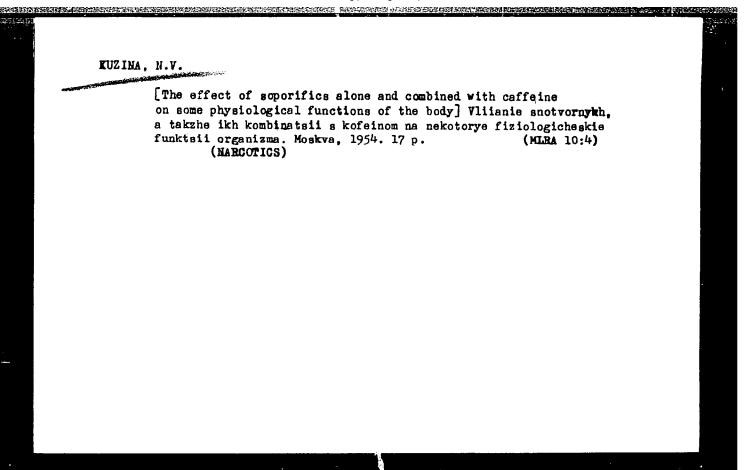KUZINA, N. V.

"The Effect of Soporifics and Combinations of Them With Caffeine on Certain Physiological Functions of an Organism." Cand Med Sci, Acad Med Sci USSR Moscow, 1954. (KL, No 3, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

KUZINA, N.V.

[The effect of soporifics alone and combined with caffeine
on some physiological functions of the body] Vliianie snotvornykh,
a takzhe ikh kombinatsii s kofeinom na nekotorye fiziologicheskie
funktsii organizma. Moskva, 1954. 17 p.   (MLRA 10:4)
          (NARCOTICS)

КUDAYA, Ś. Ś.

"The Pharmacology of Aminopterin."

report presented at the 142nd meeting of the Pharmacology and Toxicology Section
of the Moscow Society of Physiologists, Biochemists and Pharmacologists, 26 Nov. 1957.

Institute of Stomatology, Moscow

(Farmakologiia i Toksikologiia, 21, No. 6, Nov/Dec 58, p. 614)

KUZINA N.V.

Combined effect of meprobamate and pyramidon. Farm. i toks.
26 no.5:568-573 S-O '63.   (MIRA 17:8)

1. Kafedra farmakologii (zav. - prof. M.V. Komendantova)
Moskovskogo meditsinskogo stomatclcgicheskogo instituta.

KUZINA, N.V.

Some aspects of the pharmacological action of oxylidine and its
combinations with amidopyrine. Farm. i toks. 28 no.6:645-652
N-D '65.   / (MIRA 19:1)

1. Kafedra farmakologii (zav. - prof. M.V.Komendantova) Moskov-
skogo meditsinskogo stomatologicheskogo instituta.

KUZINA, O.I.; VOLKOVA, V.N.; SUKHODOL'SKAYA, I.I.

[Economy of the Northern Caucasus in the third year of
the seven-year plan; a recommended list of literature]
Narodnoe khoziaistvo Severnogo Kavkaza, 3-i god semi-
letki; rekomendatel'nyi ukazatel' literatury. Rostov-
na-Donu, 1962. 60 p.   (MIRA 17:8)

1. Rostov-on-Don. Gosudarstvennaya nauchnaya biblioteka
imeni K.Marksa.

BUKIN, V.N.; PANTSKHAVA, Y.S.; BYKHOVSKIY, V.Ya.; LOGOTKIN, I.S.; KONDAKOVA, L.N.; KUZINA, O.M.

Using enriched media in the biosynthesis of vitamin B_{12} by methane-producing bacteria. Vit. res. i ikh isp. no.6:52-55 '63.   (MIRA 17:1)

1. Institut biokhimii imeni A.N. Bakha AN SSSR, Moskva, TSentral'nyy institut fermentnoy i spirtovoy promyshlennosti i Groznenskiy atsetonovyy zavod.

PANTSKHAVA, Ye.S.; BYKHOVSKIY, V.Ya.; KONDAKOVA, L.N.; ZARITSKAYA, K.K.;
    KUZINA, O.M.

Intensifying the biosynthesis of vitamin B_{12} by means of some
enriching additives. Ferm. i spirt. prom. 30 no.5:31-33 '64.
(MIRA 17:10)

1. Institut biokhimii imeni A.N. Bakha AN SSSR (for Pantskhava,
Bykhovskiy). 2. Groznenskiy atsetonovyy zavod (for Kondakova,
Zaritskaya, Kuzina).

POZNANINA, L.P., doktor biol. nauk, red.; KUZINA, O.S., kand.
        biol. nauk, red.; VERMEL', Ye.M., doktor biol. nauk,
        red.

        [Achievements of science: Zooparasitology 1963] Itogi nauki:
        zooparazitologiia; 1963. Moskva, Akademiia nauk SSSR, 1965.
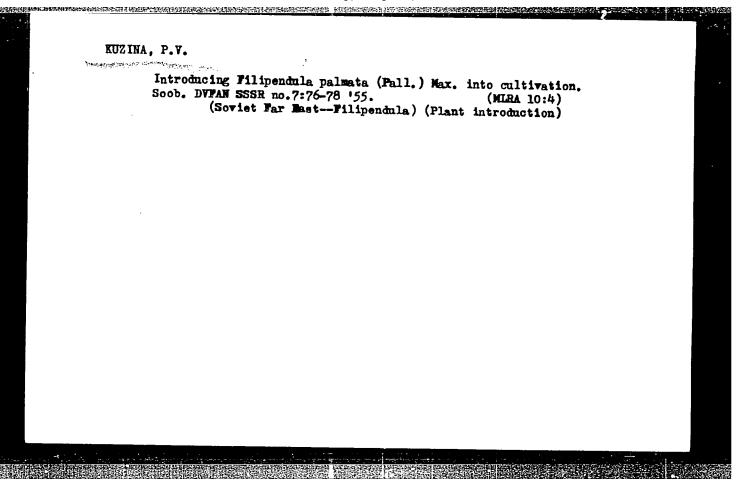   87 p.   (MIRA 19:1)

KUZINA, O.S.

Reaction of mosquitoes to repellents and some other irritants
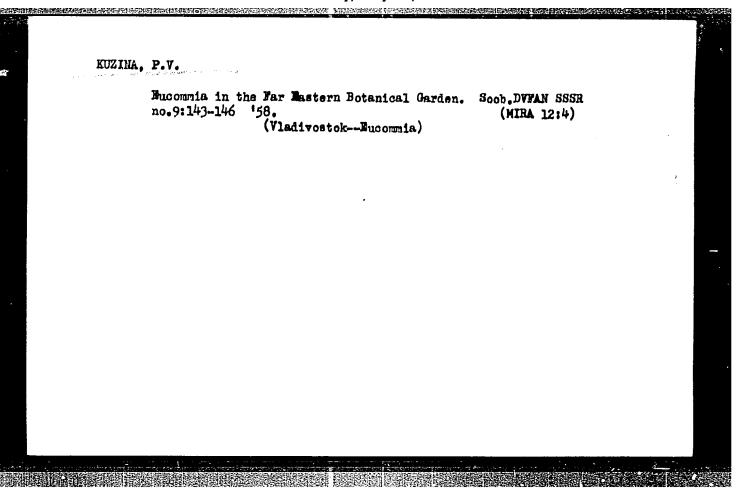[with summary in English]. Zool. zhur. 37 no.9:1352-1362 S '58.

(MIRA 11:10)

1.Institut malyarii, meditsinskoy parazitologii i gel'mintologii
Ministerstva zdraveokhraneniya SSSR{ Moskva.
(Mosquitoes) (Phthalic acid)

KUZINA, O.S., kand.biolog.nauk

New insecticide against Pediculus humanus corporis. Voen.med.
zhur. no.3:77 '59.   (MIRA 12:6)
          (PHENYLBUTAZONE, eff.
               insecticidal action against body lice in
               rabbits (Rus))
          (PEDICULI, eff. of drugs on
               phenylbutazone, insecticidal action against
               body lice in rabbits (Rus))
          (INSECTICIDES
               phenylbutazone, insecticidal action against
               body lice in rabbits (Rus))

KUZINA, P.V.

Introducing Filipendula palmata (Pall.) Max. into cultivation.
Soob. DVFAN SSSR no.7:76-78 '55.   (MLRA 10:4)
        (Soviet Far East--Filipendula) (Plant introduction)

KUZINA, P.V.

Eucommia in the Far Eastern Botanical Garden. Soob.DVFAN SSSR
no.9:143-146 '58.   (MIRA 12:4)
                    (Vladivostok--Eucommia)

KUZINA, P.V.

Annual rye grass at the Botanical Garden of the Far Eastern branch
of the Soviet Academy of Science. Soob.DVFAN SSSR no.11:104-107
'59.   (MIRA 13:11)

1. Botanicheskiy sad Dal'nevostochnogo filiala imeni V.L.Komarova
Sibirskogo otdeleniya AN SSSR.
                    (Maritime Territoy--Rye grass)

KUZINA, P.V.

Experiments in raising chufa (Cyperus esculentus L.) in the botanical garden of the Far Eastern Branch of the Siberian Division of the Soviet Academy of Sciences. Soob.DVFAN SSSR no.12:107-109 '60.
(MIRA 13:11)

1. Dal'nevostochnyy filial imeni V.L.Komarova Sibirskogo otdeleniya AN SSSR.
(Maritime Territory--Chufa)

KUZINA, P.V.

Far Eastern Botanical Garden. Biul. Glav. bot. sada no.40:115-
116 '61.   (MIRA 14:10)

1. Botanicheskiy sad Dal'nevostochnogo filiala Sibirskogo
otdeleniya AN SSSR, Vladivostok.
  (Muravyev-Amurski Peninsula--Botanical gardens)

KUZINA, P.V.

Cultivation of the clover Trifolium apertum Bobr. in the Botanical
Garden near Vladivostok. Soob. DVFAN SSSR no.17:79-81 '63.

(MIRA 17:9)

1. Botanicheskiy sad Dal'nevostochnogo filiala im. V.L. Komarova
Sibirskogo otdeleniya AN SSSR.

ANDREYEVA, L.I.; BELIKOV, I.F.; KUZINA, P.V.; SAMSONOVA, A.V.; YAKOVLEVA, V.P.

Chemical composition of some grass species of the southern Maritime Territory. Soob. DVFAN SSSR no.18:73-76 '63.   (MIRA 17:11)

1. Dal'nevostochnyy filial imeni Komarova Sibirskogo otdeleniya AN SSSR i Dal'nevostochnyy gosudarstvennyy universitet.

ALEKSANDROV, N.I.; GEFEN, N.Ye.; GAPOCHKO, K.G.; GARIN, N.S.; DANILYUK, S.S.;
    YEGOROVA, L.L.; KUZINA, R.F.; KORIDZE, G.G.;
    LABINSKIY, A.P.; LEBEDINSKIY, V.A.; MASLOV, A.I.; OSIPOV, N.P.;
    SILICH, V.A.; SMIRNOV, M.S.; TSYGANOVA, N.I.

Study of a method of aerosol immunization with powdered plague
vaccine in large population groups. Zhur. mikrobiol., epid. i
immun. 40 no.12:22-28 D '63.

(MIRA 17:12)

L 38730-66   EWT(1)/EWT(m)/EWP(j)/T   IJP(c)   RM/WW/RO   /

ACC NR: AP6012716   (A)   SOURCE CODE: UR/0190/66/008/004/0708/0712

AUTHOR: Smirnova, O. V.; Korovina, Ye. V.; Kolesnikov, G. S.; Lipkin, A. M.
Kuzina, S. I.

ORG: Moscow Institute of Chemical Technology im. D. I. Mendeleyev (Moskovskiy
khimiko-tekhnologicheskiy institut)

TITLE: Synthesis and investigation of polycarbonate from cyclopentane and phosgene

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 1, no. 4, 1966, 708-712

TOPIC TAGS: phosgene, cyclopentane, polycarbonate, polycondensation

ABSTRACT: A polycarbonate from 1,1-di-(4-hydroxyphenyl) cyclopentane was synthesized
by the condensation of cyclopentanone with phenol. The polycarbonate was prepared
by means of interphase polycondensation. Optimum conditions were established for the
polycarbonate synthesis and its physical, mechanical and dielectric properties were
determined. It was found that transparent polycarbonate films prepared from a 20%
solution in methylene chloride are suited for use at elevated temperatures. Orig.
art. has: 5 figures.   [NT]

SUB CODE: 11, 07/ SUBM DATE: 28Apr65/ ORIG REF: 006/ OTH REF: 001

Card 1/1   UDC: 541.64+678.674

KARZHEV, V.I.; KASATKIN, D.F.; SHAVOLINA, N.V.; KUZINA, T.A.

Extraction of aromatic hydrocarbons by propylene carbonate.
Khim.i tekh.topl.i masel 6 no.4:6-9 Ap '61.   (MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke
nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.
     (Hydrocarbons)   (Extraction(Chemistry))

1. ALENTSE, M.N.; BUKSHTEYN, S.M.; KALINCHENKO, I.I.; KUZINA, T.R.; PEKERMAN, F.M.;

   CHISTYAKOVA, A.V.

2. USSR (600)

4. Phosphors

7. Luminophores for erythemous luminescent lamps. Izv.AN SSSR. Ser.fiz. 15 no.6,
   1951.

9. **Monthly List of Russian Accessions,** Library of Congress, January   1953, Unclassified.

Shutov, D. A., Gaziyev, N. I. and Kuzina, T. F. "On the variability of the ascorbic acid content in the leaves of some evergreen trees under the vegetation conditions of the city of Baku", Trudy Azerbaydzh. gos. un-ta im. Kir va, Biol. seriya, Vol. III, Issue 3, 1948, p. 51-61, - Bibliog: 9 items.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 10, 1949).

KUZINA, T.M., inzh.

Results of a scientific and technical conference. Izv.vys.
ucheb.zav.; energ. 3 no.6:163-164 Je '60. (MIRA 13:6)

1. Ivanovskiy energeticheskiy institut imeni V.I.Lenina.
           (Power engineering--Congresses)

KUZINA, T.M., inzh.

Experimental investigation of the regularities of heat and
mass exchange during the evaporation of solutions. Sbor.
nauch. trud. IEI no.10 pt. 2:38-52 '62.   (MIRA 16:9)

BAZHENOV, A.P.; KUZINA, T.M.; PYATACHKOV, B.I.; ROMANOVA, T.M.

"Heat using equipment in the cotton industry" by V.P.Samoilov.
Reviewed by Bazhenov and others. Izv.vys.ucheb.zav.; tekh.tekst.prom.
no.1:160-162 '63.   (MIRA 16:4)

1. Ivanovskiy energeticheskiy institut imeni Lenina.
   (Cotton manufacture—Equipment and supplies)(Heat engineering)
                              (Samoilov, V.P.)

KALUGIN, V.F.; BARZIY, V.K.; GLAZUNOV, S.G.; KUZINA, T.S.; POPOV, B.N.

Production of large-sized cold-rolled sheet from VT-1D alloys.
Titan i ego splavy no.2:133-144 '59.   (MIRA 13:6)

1. Gosudarstvennyy komitet Soveta Ministrov SSSR po aviatsionnoy
tekhnike.
          (Titanium alloys) (Rolling (Metalwork))

KUZINA, T. S.

Kalugin, B. F.; T. S. Kuzina; and A. A. Dmitriyev.   Methods of
        Titanium-base Alloy Sheet Rolling.   p.56

Pressure Treatment of Alloys; Collection of Articles, Moscow, Oborongiz, 1958, 141pp.

KUZINA, T.S.

Kalugin, V.F., V.K. Barziy, S.G. Glazunov, T.S. Kuzina, and B.N. Popov (State Committee on Aircraft Engineering, Council of Ministers of the USSR). Production of Large-Sized Cold-Rolled Sheet From Vt-1D Alloy, p. 133. Titan i yego splavy. vyp. II: Metallurgiya titana (Titanium and Its Alloys. No. 2: Metallurgy of Titanium) Mowcow, Izd-vo AN SSSR, 1959. 179 p.

This collection of papers deals with sources of titanium; production of titanium dioxide, metallic titanium, and titanium sheet; slag composition; determination of titanium content in slags; and other related matters. The sources of titanium discussed are the complex sillimanite ores of the Kyakhtinskoye Deposit (Buryatskaya ASSR) and certain aluminum ores of Eastern Siberia. One paper explains the advantages of using ilmenite titanium slags for the production of titanium dioxide by the sulfuric acid method. Production of metallic titanium by thermal reduction processes (hydrogen, magnesium, and carbon reduction) is the subject of several papers, while other papers are concerned with the electrolytic production of titanium. Other subjects dealt with are interaction of titanium with water vapor and with hydrogen and the determination of titanium in slags.

KALUGIN, Viktor Filippovich; BARZIY, Vyacheslav Kupriyanovich;
GLAZUNOV, Sergey Georgiyevich; KUZINA, Tamara Stepanovna;
POPOV, Boris Nikolayevich; OGURTSOV, Aleksandr Ivanovich;
OL'SHANSKAYA, I.V., inzh., ved. rdd.; PONOMAREV, V.A.,
tekhn. red.

[Technology of ingot forging and the continuous rolling of
large-size, commercially pure, VT1D titanium sheet. Over-all
mechanization of the loading and unloading of ingots from
holding furnaces] Tekhnologiia kovki slitkov i nepreryvnoi
prokatki krupnogabaritnogo lista iz tekhnicheski chistogo
titana VT1D. Kompleksnaia mekhanizatsiia protsessov zagruzki
i vygruzki zagotovok iz metodicheskoi pechi. [By] A.I.
Ogurtsov. Moskva, Filial Vses.in-ta nauchn. i tekhn. in-
formatsii, 1958. 17 p. (Peredovoi nauchno-tekhnicheskii i
proizvodstvennyi opyt. Tema 5. No.M-58-22/3)

(MIRA 16:3)

(Titanium) (Rolling (Metalwork))
(Materials handling—Equipment and supplies)

1. ALENTSEV, M.N.: BUKSHTEYN, S.M.: KALINICHENKO, I.I.: KUZINA, T.V.:
   PEKERMAN, F.M.: CHISTYAKOVA, A.V.

2. USSR (600)

4. Electric Lighting, Fluorescent.

7. Luminophores for erythemous luminescent lamps,
   Izv. AN SSSR, Ser.fiz. 15 No. 6, 1951.

9. Monthly List of Russian Accessions, Library of Congress, __January__ 1953. Unclassified.

KUZINA, U.E.

USSR/General Biology - Genetics.   B-5

Abs Jour   : Ref Zhur - Biol., No 7, 1958, 28579

Author   : Uspenskiy, N.A., Kuzina, V.E., Abramovich, Yu.I.
Inst   : -
Title   : Method of Matching Pairs in Intraspecies Hybridization
              of Soft Summer Wheats.

Orig Pub   : Zap. Voronezhsk. s.-kh. in-ta, 1956, 26, No 2, 88-97

Abstract   : The author attempted to develop methods of matching
              pairs in crossing soft wheats, chiefly based on the prin-
              ciple of crossing varieties which would complement one
              another in different features and produce varieties more
              productive and more resistant to different diseases and
              pests. With a view toward precise characterization of
              matching pairs a coefficient of intensity (CI) was in-
              troduced for the growth of either element of productivity.
              CI permitted comparison of different varieties in one ele-
              ment; in addition, different elements within the limits

Card 1/2   17

USSR/General Biology - Genetics.

B-5

Abs Jour   : Ref Zhur - Biol., No 7, 1958, 28579

of the variety could be compared. The authors consider
that through the CI it may be established to what extent
the variety studied differs from the control. The CI
may have a plus and minus sign. It is suggested that the
final evaluation of hybrids before their breeding be made
on the basis of correlative charts into which the compared
breeds are placed. The density of stems is plotted percen-
tage-wise to the standard on the abcissa, and one or ano-
ther index of productivity on the ordinate. The most valu-
able are the breeds which yield the greatest productivity
at such stem density which is most probable in production
environments. The authors consider the suggested method
of matching pairs to be more reliable than others.

Card 2/2

KUZINA, V. I.

AYZENSHTAT, Ya.S.; KUZINA, V.I.

Effect of the age of reproductive elements on the formation of hybrid seeds of the pea. Uch.zap.Len.un. no.165:13-25 '53.(MLRA 7:7)

1. Laboratoriya genetiki rasteniy kafedry genetiki i selektsii (zaveduyushchiy kafedroy professor N.V.Turbin)
    (Peas) (Hybridization, Vegetable)

BYKOVA, N.K.; BALAKHMATOVA, V.T.; VASILENKO, V.P.; VOLOSHINOVA, N.A.;
GRIGELIS, A.; DAIN, L.G.; IVANOVA, L.V.; KUZINA, V.I.; KUZNETSOVA,
Z.V.; KOZYREVA, V.F.; MOROZOVA, V.G.; MYATLYUK, Ya.V.; SUBBOTINA, N.N.

New genera and species of Foraminifera. Trudy VNIGRI no.115:5-106
'58.
                                                    (MIRA 11:10)
                    (Foraminifera, Fossil)

SUBBOTINA, N.N.; ALEKSEYCHIK-MITSKEVICH, L.S.; BARANOVSKAYA, O.F.:
BULATOVA, Z.I.; BULYNNIKOVA, S.P.; DUBROVSKAYA, N.F.; KISEL'MAN,
E.N.; KOZLOVA, G.E.; KUZINA, V.I.; KRIVOBORSKIY, V.V.; USHAKOVA,
M.V.; FREYMAN, Ye.V.

[Cretaceous and Paleogene Foraminifera in the West Siberian
Plain] Foraminifi / melovykh i paleogenovykh otlozhenii Zapadno
Sibirskoi nizmennosti. Leningrad, Nedra, 1964.455 p. (Leningrad.
Nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy,
no.234).   (MIRA 18:1)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologoraz-
vedochnyy institut, Leningrad; Sibirskiy nauchno-issledovatel'-
skiy institut geologii, geofiziki i mineral'nogo syr'ya; Novo-
sibirskoye territorial'noye geologicheskoye upravleniye i Tyu-
menskoye territotial'noye geologicheskoye upravleniye.

KUZINA, V. K.; ALEKSEYEV, A. G.; CHERNOMORDIK, R. M.; BEL'FER, A. S.; VAHUKHINA, A. S.;

" A Study of the Initial Manifestations of Coronary Ins ufficiency on the Basis of Polyclinical Records".

Voyenno Meditsinskiy Zhurnal, No. 4, 162.

KUZINA, V.P.

Simazine and atrazine in corn fields. Zemledelie 26 no.12:44-46 D '64.

(MIRA 18:4)

KUZINA, V.P.

Effect of the layers containing organic substances on the
increase of fertility of sandy soils. Zesz probl post roln
no.50a:175-191 '64.

1. All-Union Research Institute of Manuring, Agrotechnics,
and Soil Science, Moscow.

KUZINA, V. P.

Lupine

Plowing under perennial lupine for green manure., Sov. agron. 10, no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, __April__ 195/3, Uncl.
                                                                    2

KUZINA, V. P.

USSR / General and Specialized Zoology - Insects   0-7
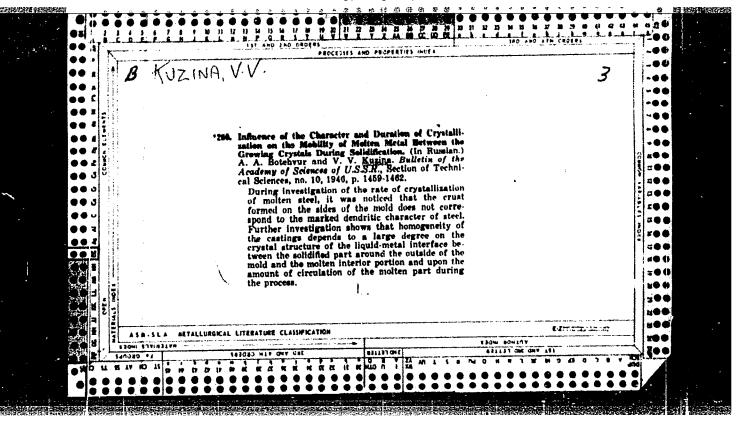
Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 23233

Author   : Somov, I.A., Bogush, P.P., Kuzina, V.P.

Inst   : Not Given

Title   : Increasing Usefulness of Control Measures with Cotton Cutworm
           Moth.

Orig Pub : Itogi rabot Vses. n.-i. in-ta khlopkovodstva, 1956 (1956),
           No 4, 47-49

Abstract : While feeding on cotton plants with fruit organs, 82% of
           caterpillars survived; 14% on cotton plants with fruit organs
           removed; > 30% of alfalfa; on nightshade and licoroce all
           caterpillars died. In the Mary oblast the first generation
           of cotton plant cutowrm moth developed on alfalfa. The egg
           deposits in 1954 began after April 20th. In May 90% were in-
           fected; in June 70% of the alfalfa area was infected with an
           average number of caterpillars correspondingly 1 and 2 on /m^2.
           However, on the cotton plant fields adjacent to alfalfa, single

Card   : 1/2

USSR / General and Specialized Zoology - Insects

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 23233

0-7

caterpillars were seen. Alfalfa did not become a reserve of caterpillars for cotton plants. In the state farm "Pakhta-Aral" no cutworm moth was found on alfalfa, and on cotton plant and tomatoes eggs and caterpillars appeared for the first time at the beginning of June. The chemical treatment of cotton plants should properly be begun at the height of cutworm moth egg deposits, and repeated 6-10 days later depending on the dynamics of the pest and the degree of infection.

Card   : 2/2

KOZINA, V.P., kand.sel'skokhozyaystvennykh nauk

Promising method for increasing the fertility of sandy soils.
Zemledelie 24 no.8:63-68 Ag '62.   (MIRA 15:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i
agropochvovedeniya.
                    (Sandy soils)

B KUZINA, V.V.   3

*2A. Influence of the Character and Duration of Crystalli-
zation on the Mobility of Molten Metal Between the
Growing Crystals During Solidification. (In Russian.)
A. A. Botehvur and V. V. Kuzina. Bulletin of the
Academy of Sciences of U.S.S.R., Section of Techni-
cal Sciences, no. 10, 1946, p. 1459-1462.

During investigation of the rate of crystallization
of molten steel, it was noticed that the crust
formed on the sides of the mold does not corre-
spond to the marked dendritic character of steel.
Further investigation shows that homogeneity of
the castings depends to a large degree on the
crystal structure of the liquid-metal interface be-
tween the solidified part around the outside of the
mold and the molten interior portion and upon the
amount of circulation of the molten part during
the process.

ASB-SLA   METALLURGICAL LITERATURE CLASSIFICATION

KUZINA, V.V.

ZEYNALLY, M.I.; SHAPIRO, B.A.; BABAYEVA, V.A.; KUZINA, V.V.; KUZNETSOVA, V.G.

Some results of flooding the Kirmaki 11 horizon in the southern
depressed section of the Buzovny oil fields. Azerb.neft.khoz. 35
no.10:13-16 O '56.   (MIRA 10:1)
              (Buzovny--Oil filed flooding)

KUZINA, Ye.

        If one believes in man. Sov.profsoiuzy 7   no.23:48-50
        D '59.   (MIRA 12:12)

        1. Pomoshchnik mastera rovnichnogo tsekha fabriki im.Kalinina.
                (Textile workers)

GRUSHVITSKIY, I.V.; AGNAYEVA, Ye.Ya.; KUZINA, Ye.F.

Heterogeneity of mature carrot seeds with regard to the size of the embryo. Bot. zhur. 48 no.10:1484-1489 O '63.   (MIRA 17:1)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

KATORZHNOV, N.D.; KUDRYAVTSEV, G.I.; KUZINA, Ye.F.; LAZUTKINA, T.P.

Studying the continuous process of the production of poly-
caprolactam. Khim. volok. no.4:20-22 '65.   (MIRA 18:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo
volokna.

83663

S/138/60/000/002/008/009
A051/A029

17.1400   also 1109

AUTHORS: Vorona, S.I., Kuzina, Ye.N.

TITLE: The Problems Concerning the Composition of X-Ray-Protective
              Rubbers and the Calculation of Their Protective Property

PERIODICAL: Kauchuk i Rezina, 1960, No. 2, pp. 35 - 43

TEXT: The authors point out that in view of the increasing applica-
tion of X-rays the need for protective means has grown. A brief outline of
the physical properties of X-rays and a list of the major formulae explain-
ing the behavior of the rays is given. The absorption of X-rays takes place
according to the exponential law. The protective properties of the material
are usually characterized in practice by the following parameters: 1) the
lead equivalent (i.e., the thickness of lead in mm, equivalent to the protec-
tive qualities of a layer of material); 2) the lead coefficient K (the thick-
ness of lead in mm equivalent in its protective properties to a layer of
material with a thickness of 1 mm) expressed in ‰. For rubbers containing
lead or its compounds it would be: $K = 10 \rho - 13$. It is known from liter-
ature that rubber used for protective purposes usually contains lead monox-

Card 1/4

83663

S/138/60/000/002/008/009
A051/A029

The Problems Concerning the Composition of X-Ray-Protective Rubbers and the
Calculation of Their Protective Property

ide as a filler (Refs. 6,7,9). The disadvantages of this filler lie in its
tendency to combine with the sulfur during the vulcanization process, caus-
ing a darkening of the vulcanizate. The latter also have a low aging resis-
tance when containing lead monoxide in the presence of high doses of sulfur.
The authors suggest that butadiene-styrene rubber be used for better resis-
tance to gamma- and X-radiation. The main purpose of this work was to im-
prove the quality of X-ray protective rubber and to discover new fillers
which would replace the toxic and scarce lead monoxide. Three paths were
followed in the investigations: a) a study of the X-ray protection fillers
and softeners, b) a study of the effectiveness of a combined application of
fillers, c) a study of the expediency of using multi-layer X-ray protective
rubber. The first two points are discussed in the present article. The
results showed that pressing vulcanization does not increase the protective
properties of rubber contrary to existing opinions. A series of fillers, is
containing elements with a relatively high atomic number, were investigated
as to their effect on the lead coefficient. It was established that the

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lead coefficient of fillers introduced into the rubber mixture in equal
volumetric concentrations, decreases with the decrease of the atomic number
of the corresponding active elements (see Table 2). This agrees with the
absorption law of X-rays. The concentration of the fillers was also studied
After deriving several Formulae (8 - 13), the following conclusions could
be drawn: 1) the lead coefficient of rubber filled with lead monoxide is
numerically equal to the volumetric concentration of the lead in the rubber,
2) the lead coefficient of the rubber is a linear function of the volumetric
concentration of the lead monoxide contained therein. Experimental results
shown in Table 3 confirm the validity of these conclusions. The calculations
show that the greater is the concentration of the filler, the less the
weight of a unit area of the X-ray protection plate at a constant lead equiv-
alent. Upon investigating the effectiveness of applying a mixed filler it
was found that in all cases, except the one where the rubber contains lead
monoxide with chalk, the lead coefficient in the combined application of
fillers does not change additively, which is an anomaly of the law of absorp-
tion of X-rays. According to the authors no physical explanation can be
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The Problems Concerning the Composition of X-Ray-Protective Rubbers and the
Calculation of Their Protective Property

given for this phenomenon. The greatest decline from the law of absorption
was found in the mixture of lead monoxide with barium sulfate (Fig. 4).
Based on experimental results a composition was developed for the ПВ-40У (PV-40U)
type rubber. It is pointed out that in industry barium sulfate can be sub-
stituted by ground barium oxide. The method for computing the lead coeffi-
cient of rubber containing lead monoxide combined with other fillers is out-
lined in detail. There are 4 tables, 8 figures and 13 references: 9 Soviet
and 4 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh
                 izdeliy (Scientific Research Institute for Rubber and Latex
                 Products)

Card 4/4

KUZINA Ye. V.

The effect of the soil reaction on perennial grasses at various stages of their growth and development. N. S. Avdonin, E. V. Kuzina, and L. A. Lebedeva. Voprosy Povysheniya Plodorodiya Pochv Nechernozem, Polosy (Moscow: Izdatel'stvo Moskov. Univ.) 1954, 135-46; Referat. Zhur., Biol. 1955, No. 809.—Alfalfa, clover, and timothy were grown on sandy soil and in Avdonin culture medium at pH 7.0. At different stages of growth the pH of some plots and culture media was changed to 4.5 and 5.5 for 20 days. Some plots were kept at pH 7.0, 5.5, and 4.5 throughout the entire period of growth, others had their pH changed gradually at different periods from neutral to acid reaction; to the soil of some plots different quantities of P and Al were added. Alfalfa, clover, and timothy were most sensitive to low pH during the sprouting and the early period following. In the case of timothy this effect extended over 20 days and in clover and alfalfa over 40-50 days. An increase in the dose of P alleviated the neg. effect of the acid reaction on the seed sprouting and the immediate growth period following, whereas increasing the dosage of $AlCl_3$ had a reverse effect. As the plants' growth progressed an automatic shift from the acid to the neutral reaction gradually took place. Acid soil reaction disturbed the protein and carbohydrate metabolism. The polysaccharide and protein-N content was reduced and that of the monosaccharides and nonprotein N was increased. B. S. Levine

KUZINA, Ye. V.

Caution for … use of …

Uchenye Zapiski Moskov. Gosudarst. Univ. id. M. V. Lomonosov 1956, No. 185, 5-18.—The plants investigated were winter wheat and winter rye. The main reason for heavy losses in the turf-podzol soils were the acidity, mobile Al, and an excess of Mn, which exerted their damaging action during the winter. Both Al and Mn in their mobile forms decrease the cold resistance at −2 or −3°, temps, easily withstood in the absence of Al and Mn, and such losses can be combated by giving heavy doses of manure, decomposing peat and phosphate fertilizers. Such action will increase

and wheat cultures, and 1 b about 1½ free acid is the best, as it buffers the acidity and immobilizes the Al completely. The Al interferes with the carbohydrate and protein synthesis in the plant. This is presumably the reason for the increased susceptibility in cold weather and in spring …

AVDONIN, N.S.; KUZINA, Ye.V.

Effect of soil properties, fertilizers and wintering conditions
on the hardiness and yield of winter wheat. Vest. Mosk. un. Ser.
6: Biol., pochv. 17 no.3:60-69 My-Je '62.   (MIRA 15:6)

1. Kafedra agrokhimii Moskovskogo universiteta.
(WHEAT)

DEMIDOVA, L.S., SHAVYRINA, A.V., KUZINA, Z.M., FADEYEVA, O.I.,
        LEVIN, V.L.

    Results of using geobotanical methods in hydrogeological
    investigations in Chernozem regions, Trudy VAGT no.1:61-70
    '55.   (MLRA 9:11)
            (Phytogeography) (Chernozem soils)
                    (Water, Underground)

KOCHUROV, Yuriy Dmitriyevich; MOREV, Petr Georgiyevich; MART'YANOV,
    Mikhail Mikhaylovich; SHAPROV, Mikhail Fedorovich; KLYUYEVSKIY,
    Fedor Mikhaylovich: BLIDCHENKO, I.F., inzh., retsenzent;
    GRISHIN, K.S.,inzh., retsenzent; IVANOV, S.N., inzh., retsen-
    zent; KUZINA, Z.P., inzh., retsenzent; MUSAL'YAN, A.T., inzh.
    retsenzent; SALTMAN, R.V., inzh., retsenzent; SOBAKIN, V.V.,
    inzh., red.; USENKO, L.A., tekhn. red.

[Manual for the personnel of chemical and technical laboratories
in the field and at depots] Rukovodstvo rabotnikam dorozhnykh i
depovskikh khimiko-tekhnicheskikh laboratorii. Izd.2., ispr. i
dop. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei
soobshcheniia, 1962. 211 p.   (MIRA 15:4)
        (Railroads--Equipment and supplies)
        (Engineering laboratories)

KUZNETS, Leonid Moiseyevich; EFRUSSI, Ya.I., red.

[Television receivers] Televizory. Moskva, Energiia,
1964. 38 p. (Massovaia radiobiblioteka. Spravochnaia
seriia, no.517)   (MIRA 17:9)

l.llbb

27080
S/123/61/000/015/014/032
A004/A101

AUTHORS: Dolgov, V. A., Kuzinets, S. A.

TITLE: Production of rims and blades of radial turbines

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 15, 1961, 14, abstract
             15B82 (V sb. "Nekotoryye vopr. tekhnol. proiz-va, turbin". [Tr.
             Leningr. metallich. z-da, no. 7]. Moscow - Leningrad, 1960, 98-107)

TEXT: The authors describe the technological processes and equipment for
the machining of the assembled blade type rim and blades for the rims of radial
turbines. They present the layouts of a fixture for the static balancing of the
rims with an accuracy in the range of 5-25 g/cm and of a swivel device for the
milling of the blade channel and its flaring from the two ends. There are 6
figures.

                                                    I. Briskman

[Abstracter's note: Complete translation]

Card 1/1

KUZINETS, S.D., inzhener.

Pneumatic bench vise. Mashinostroitel' no.8:8-9 Ag '57.

(MLRA 10:8)

1. Leningradskiy Ordena Lenina metallicheskiy zavod.
(Vises)

I. 1100

27079
S/123/61/000/015/013/032
A004/A101

AUTHOR: Kuzinets, S. D.

TITLE: Fixture for the machining of the working part of turbine blades
            with helical and curved profiles

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 15, 1961, 7, abstract
            15B49 (V sb. "Nekotoryye vopr. tekhnol. proiz-va turbin". [Tr.
            Leningr. metallich. z-da, no. 7]. Mosoow - Leningrad, 1960, 217-223)

TEXT: The author describes a special turntable for the milling of helical
blades of the BK-100-6 (VK-100-6) turbine with profile milling cutters, instead
of machining these blades on a shaper with the aid of a copying device. The new
method cut down labor consumption by a factor of 2.5. For the machining of
blades with a curved profile structure a rocking copying device is used which is
mounted on the table of a horizontal milling machine. A special device is provid-
ed for making clearances. A special unit is used for controlling the force in
magnitude and direction from the load to the table. There are 9 figures.

[Abstracter's note: Complete translation]   I. Briskman

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PHASE I BOOK EXPLOITATION   SOV/5460

Leningradskiy metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Nekotoryye voprosy tekhnologii proizvodstva turbin (Certain Problems
     in the Manufacture of Turbines) Moscow, Mashgiz, 1960. 398 p.
     (Series: Its: Trudy, vyp. 7) Errata slip inserted. 2,100 copies
     printed.

Sponsoring Agency: RSFSR. Sovet narodnogo khozyaystva Leningrad-
     skogo ekonomicheskogo administrativnogo rayona, Upravleniye
     tyazhelogo mashinostroyeniya, and Leningradskiy dvazhdy ordena
     Lenina metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Ed. (Title page): G. A. Drobilko; Editorial Board: Resp. Ed.: G. A.
     Drobilko, B. A. Glebov, A. M. Mayzel', and M. Kh. Mernik; Tech.
     Ed.: A. I. Kontorovich; Managing Ed. for Literature on Machine-
     Building Technology: Ye. P. Naumov, Engineer, Leningrad Depart-
     ment, Mashgiz.

PURPOSE: .   This collection of articles is intended for technical
     personnel in turbine plants, institutes, planning organizations,
     as well as for production innovators.

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Certain Problems   (Cont.)   SOV/5460

COVERAGE: The experience of the LMZ (Leningradskiy metallicheskiy
zavod - Leningrad Metalworking Plant) in the manufacture of modern
large-capacity turbines is presented. Methods for the rationali-
zation of basic manufacturing processes and for the mechanization and
automation of manual operations are given. Descriptions of attach-
ments and tools designed by LMZ for improving labor productivity
and product quality are provided, and advanced inspection methods
discussed. References accompany some articles. No personalities
are mentioned. There are 26 references: 25 Soviet and 1 English.

TABLE OF CONTENTS:

Certain Problems   (Cont.)

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'7

II.   THE MECHANIZATION AND AUTOMATION
      OF LABOR-CONSUMING OPERATIONS

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/ C

Certain Problems   (Cont.)   SOV/5460

III.   NEW METHODS FOR MANUFACTURING
TURBINE BLADES

KUZINETS, Ye.M.

        Molding cornice pieces and how to install them. Rats. i izobr.
        predl. v stroi. no.106:23-25 '54.   (MLRA 8:10)
                              (Cornices)

SIDORSKI, T.; BIENIEK, J.; KOMAR-KLATT, K.; KUZINOWICZ, E.

Causes of the appearance and therapeutic results in delayed union
and pseudarthrosis of the long bone according to our material. Chir.
narz. ruchu ortop. polska 26 no.5:575-583 '61.

1. Z Kliniki Ortopedycznej AM i Oddzialu Ortopedycznego Szpitala
Wojewodzkiego we Wroclawiu Kierownik: dr J.Kowalski.
        (FRACTURES UNUNITED)   (PSEUDOARTHROSIS)

Kuzinski, S.

Polish Technical Abstracts
No. 4, 1953
Agriculture, Food Processing
Industry, Forestry, Fisheries

2166   311:63
* Czerniawska M., Kuziński S. Agricultural Statistics.
   „Statystyka rolnicza". Warszawa, 1953, PWRiL, 164, 200 pp, 12
figs., 03 tabs.
   This book is in two parts: Part I. — General bases of statistics —
contains fundamental knowledge on the theory of statistics based on
examples taken from agriculture, special emphasis being laid on the
group methods applied by Lenin; Part II. — Agricultural statistics —
contains methods of collecting, preparing and analysing agricultural
statistical data. The last chapter sets out to prove agricultural balance
as being one of the main problems of agricultural statistics in so-
cialist countries.

KUZIONOV, P.V., Cand Med Sci -- (diss) "State of certain

hemodynamic indicators in patients with endarteritis

obliterans treated with pachycarpine and intraarterial

intra-arterial injection of blood." Tashkent, 1959,

16 pp (Tashkent State Med Inst) 250 copies (KL, 34-59, 117)

- 93 -

NURMUKHAMEDOV, R.M., kand.med. nauk (Tashkent, ul. K.Marksa, d.59,
    kv.50); KUZIONOV, P.V., kand.med. nauk

Surgical treatment of hernia in elderly and senile patients.
Vest. khir. 70 no.6:40-43 Je'63   (MIRA 16:12)

1. Iz khirurgicheskoy kliniki (zav. - prof. M.P.Postolov)
lechebnogo fakul'teta Tashkentskogo meditsinskogo instituta.

KUZIO?, K.

Possibilities of utilizing boring machines in laying cables. p.23.
Const·uction of atomic-electric stations in the Soviet Union. p. 27.

Spravochnik po tsvetni metali i ·plavi. Sofiia, Bulgaria. Vol. 10,
no. 7, July 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 9, No. 2,
February, 1960, Uncl.

703. Gigienicheskaya organizatsiya rezhima dlya uchashchegosya v shkole i sem'ye.
Izd.-2-e, (ispr.) Tbilisi, Izd-vo In-ta, 1954. 173s. 17sm. (Nauch.-issled.
in-r ped. nauk li-va prosveshcheniya Gruz. SSR). 3.000 ekz. nr. 10k.-bibliogr:
s. 173-76 (44 nazu)-na gruz. yaz-(54-49001) I-e izd. vyshlo pod zagl: Rezhim
dlya shkol'nika. 613.955 + (G16.3)

SO: Knizhnaya Letopis, Vol. 1, 1955

SOV/30-59-1-46/57

28(0)
AUTHORS: Blavatskiy, V. D., Kuzishchin, V. I.

TITLE: Submarine Investigations of the Ancient Phanagoria   (Podvodnyye razvedki drevney Fanagorii)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 130-131 (USSR)

ABSTRACT: During the summer of the past year the Institut istorii material'-
             noy kul'tury Akademii nauk SSSR (Institute for the History of
             Material Culture of the Academy of Sciences USSR) carried out
             archeological submarine investigations in the Kerch' straits
             and the northern coast of the Black Sea. Studies were carried
             out by a team of submarine archeologists, professors and
             students of the faculty of history of Moscow University as well
             as the Moskovskiy energeticheskiy institut (Moscow Power
             Engineering Institute) (Ref 1). The bottom of the sea was in-
             vestigated in depths of from 2-3 to 25 m near Cape Takil', the
             Kyzaulskiy lighthouse, the Zheleznyy Rog Cape, the sand banks
             Mariya Magdalina, Anapa, Gurzuf (near the Adolar Stones) and
             in the bay of Yevpatoriya. The main task of the archeologists
             was the investigation of the sea floor of the Tamanskaya bay
             near the ancient city of Phanagoria   as well as the
Card 1/2   drawing-up of a plan of the flooded parts of the antique city

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Submarine Investigations of the Ancient Phanagoria

(compare with figure). In some parts investigations had
already been carried out earlier, as can be seen from the
papers by K. K. Gerts and V. D. Blavatskiy (Ref 2). The area
of the flooded parts of the city of Fanagoriya covers about
15 hectares. According to the excavations carried out in
1936-1940 (Ref 3) the entire area of the city may be assumed
to have amounted to 50 hectares.
There are 1 figure and 3 Soviet references.

Card 2/2

KUZIVANOV, V. A.

"Reduction of the Forces of Gravity in Mountainous Regions." Cand Phys-Math Sci, Inst of Geophysics, Acad Sci USSR, 29 Dec 54. (VM, 21 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

KUZIVANOV, V.A.

Reducing gravity anomalies. Izv.AN SSSR.Ser.geofiz. no.10:1161-
1173 O '56.   (MLRA 10:1)

1. Akademiya nauk SSSR Institut fiziki Zemli.
        (Magnetism, Terrestial)

Kuzjunnov, U. U.

PHASE I BOOK EXPLOITATION   SOV/3681

Akademiya nauk SSSR. Institut fiziki zemli

Voprosy instrumental'noy gravimetrii; [sbornik] (Problems of Instrument Gravimetry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 76 p. (Series: Its: Trudy, No. 8/175/) Errata slip inserted. 1,500 copies printed.

Ed.: Yu. D. Bulanzhe, Doctor of Physical and Mathematical Sciences; Ed. of Publishing House: V.G. Berkgaut; Tech. Ed.: Yu.V. Rylina.

PURPOSE: This publication is intended for geophysicists, physicists, hydrographers, geodesists, and navigators.

COVERAGE: This is a collection of eight articles dealing with gravimetric instruments used in oceanographic investigations. Descriptions of the instruments and data on test results are given. No personalities are mentioned. References appear at the end of some of the articles.

Popov, Ye. I. Quartz Gravimeter for Observations on the Ocean. 32
A description is given of a quartz gravimeter of new design with photographic recording of the readings. Strong damping of its elastic system makes observations possible while moving if the instrument is installed in a gimbal.

Sukhodol'skiy, V.V. Instrument RNU for Recording Incline and 42 Acceleration in Gravimetric Determinations on the Ocean
In addition to the recording of incline and acceleration, the instrument makes galvanometric recording of vibrations which are converted into electrical oscillations by means of suitable transmitters. Data obtained during expeditions to determine the nature of vibrations, inclines and accelerations acting on the decks of a diesel-electric ship and the expedition vessel "Mikhail Lomonosov" are presented.

Bulanzhe, Yu. D. Vibration of the Support of Quartz Gravimeters 54 with Horizontal Torsion Wire

Romanyuk, V.A. Effect of Support Vibrations on the 61 Pendulum Oscillation Period

Kusivanov, V.A. Gravity Determination by Means of a 68 Gravimeter on a Moving Base

Berezin, E.M., and V.A. Kusivanov. Nomograms for the 72 Determination of Corrections for Amplitude, Temperature, Depth of Submersion and Eötvös Effect and for the Determination of the Coefficient of Vibration of the Support in Pendulum Observations on the Ocean

AVAILABLE: Library of Congress

KUZIVANOV, V. A.

"On the Analytical Extension of the Gravitational Potential in an Internal Field," by V. A. Kuzivanov, Institute of the Physics of the Earth, Academy of Sciences USSR, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 12, Dec 56, pp 1419-1426

The analytical extension of potential into an internal field is considered from the point of view of two inverse problems of gravimetry: the problem of the determination of the shape of the geoidal surface and the problem of the determination of the depth of the extension of the upper surface of the attracting body.

The difficulties encountered in determining the shape of the earth by the usual methods, i.e., the standardization of the earth, the determination of the deformation of the geoidal surface and of the change of the gravitational field specified by the standardizations, and obtaining on the geoidal surface, the marginal values of the potential characterizing the gravitational field outside the earth's surface are discounted on the basis of the method set forth by A. K. Malovichko. This method

says that these difficulties are imagined and that the shape of the earth can be accurately determined on the basis of only one of the geodetic and gravimetric measurements free of the attraction of geological data concerning the composition of the earth's crust. Malovichko says that masses outside the geoidal surface can always be replaced by certain conditional masses located only under the geoid and consequently the surface between the geoid and the earth's surface can be considered "free" from the attracting mass; in this manner the latter are not an obstacle for the analytical extension of the potential up to the geoid.

Sum 1274

49-58-5-9/15

AUTHOR: Kuziyanov, V. A.

TITLE: The Determination of Gravity by a Gravimeter at Sea.
(Opredeleniye sily tyazhesti gravimetrom na more)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,
1958, Nr 5, pp 648-654 (USSR)

ABSTRACT: The basic difficulty in determinations at sea lies in
the motion of the gravimeter support. Such a motion can
consist of vertical, horizontal and rotational accelerat-
ions and inclinations of the gravimeter apparatus. To
decide which disturbing factors must be taken into account,
recourse is had to the differential equation of motion of
the gravimeter pendulum. Two systems of coordinates are
used: the first absolute, relative to a stationary Earth
X, Y, Z and the second in motion relative to the moving
gravimeter support, xyz. The x, y, z system is related
to the X, Y, Z system by the angles α, β, γ (where α is
the angle yOy' ; β is the angle xOx' ; γ is the angle
XOx' (equal to YOy'); Ox' is the line of intersection of
the plane zOx with the horizontal plane XOY ; Oy' is
the line of intersection of the plane zOy with the plane

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.The Determination of Gravity by a Gravimeter at Sea.

XOY (Fig.1)) by means of the relations:

$$x = X \cos \delta \cos \gamma - Y \cos \delta \sin \gamma + Z \sin \delta ,$$

$$y = X(\cos \alpha \sin \gamma + \sin \alpha \sin \delta \cos \gamma) + Y(\cos \alpha \cos \gamma - \sin$$
$$\sin \alpha \sin \delta \sin \gamma) + Z \sin \alpha \cos \delta , \qquad (1.1)$$

$$z = X(\cos \alpha \sin \delta \cos \gamma - \sin \alpha \sin \gamma) - Y(\sin \alpha \cos \gamma +$$
$$+ \cos \alpha \sin \delta \sin \gamma) + Z \cos \alpha \cos \delta .$$

Here $\delta = \angle XOx = $ arc tg(tg β cos α) .

It is assumed for simplicity that the gravimeter pendulum is plane, its pivot is in the plane xOz and makes an angle Θ with the z-axis and that the pendulum rod coincides with the y-axis. To solve the differential equation the second form of Lagranges equations in generalised coordinates is used. This has the form Eq.(1.2), where T is the kinetic energy of the system, Q is the generalised force (equal to

$$\ddot{U}\frac{\partial x}{\partial \Theta} + \ddot{V} \frac{\partial y}{\partial \Theta} + \ddot{W} \frac{\partial z}{\partial \Theta}), \ddot{U}, \ddot{V}, \ddot{W} \text{ are the projections of the}$$

acting and inertial forces on the x y and z axes and t is

Card 2/10 the time. Relative kinetic energy is :

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The Determination of Gravity by a Gravimeter at Sea.

$$T = m\ell^2 \frac{\dot{\theta}^2}{2}$$ where m is the mass of the pendulum and ℓ

is its length. To determine an expression for Q , it is
first necessary to obtain one for $\ddot{U}$, $\ddot{V}$ and $\ddot{W}$. This is given
in Eq.(1.3) (Ref.1). Where $\ddot{x}$, $\ddot{y}$, $\ddot{z}$ are the components
of the acceleration of the gravimeter support; ω_x, ω_y, ω_z
are the projections of the angular velocity ω on the x,
y and z axes; ε_x, ε_y, ε_z are the corresponding projections
of the angular acceleration ε .   Taking:

$$\frac{\partial x}{\partial \theta} = \ell \cos \theta = z, \quad \frac{\partial y}{\partial \theta} = 0, \quad \frac{\partial z}{\partial \theta} = -\ell \sin \theta = -x \quad , \text{ gives Eq.(1.4).}$$

It is easy to show that:

$$\omega_x = \dot{\alpha} + \dot{\gamma} \sin \delta, \quad \omega_y = \dot{\delta} \cos \alpha - \dot{\gamma} \sin \alpha \cos \delta, \quad \omega_z = -\dot{\delta} \sin$$
$$\sin \alpha - \dot{\gamma} \cos \alpha \cos \delta .$$

Diff. ω_x, ω_y, ω_z w.r.t. time gives ε_x, ε_y, ε_z. Introducing

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The Determination of Gravity by a Gravimeter at Sea.

an elastic force $-h(\tau + \theta)$ proportional to the angle of swing of the rod, and a restoring force $-k\theta$ due to the medium, Eq.(1.2) can be written as Eq.(1.5). This is the required differential equation for the pendulum I (Fig.2). It will be shown that to remove or decrease disturbances it is convenient to use two oppositely directed pendulums close to the horizontal (Fig.2). Thus Eq.(1.6) gives the differential equation for pendulum II. To solve Eqs.(1.4) and (1.5) the factors on the right are replaced by the small magnitudes α, δ and ε (where $\varepsilon = \frac{\pi}{2} - \theta$ is the angular deviation of the pendulum from the x-axis) and introducing the following:

$$\frac{h}{ml^2} = n^2, \quad \frac{k}{ml^2} = 2\lambda, \quad g - \ell n^2\left(\tau - \frac{\pi}{2}\right) = g_0 + \Delta g - \ell n^2\left(\tau - \frac{\pi}{2}\right) =$$

$$= \Delta g \quad,$$

(where Δg is the required gravitational increment, $g_0 =$

$= \ell n^2(\tau - \frac{\pi}{2})$ = constant is the value of the gravitational

acceleration for which the gravimeter lever is horizontal)

Card 4/10we get Eq.(1.7) for pendulum I and Eq.(1.8) for pendulum II.

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Summing the factors in I and II gives Eq.(1.9). Equating Eqs.(1.6) and (1.7) with Eq.(1.8) shows that this summing has removed the effects of $\ddot{\delta}$, $\alpha^2\ddot{\delta}/2$, $\alpha\ddot{\gamma}$, $2\dot{\gamma}^2\delta$, $\alpha^3\ddot{\gamma}/6$, $\delta^2\alpha\ddot{\gamma}/2$, $2\alpha\delta\ddot{\delta}\dot{\gamma}\delta$ and the effect of $g\delta/l$ and $\ddot{x}/l$ is reduced. Eqs.(1.6), (1.7) and (1.8) can be written in the form Eq.(1.10), where $f_1(t)$ is the aggregate of factors depending only on time; $f_2(t)\varepsilon$ is the aggregate of factors depending on the time t and the angle ε ; and $f_z(\varepsilon)$ is the aggregate of factors depending only on angle. If we assume small disturbances, then, following I.D.Zhongolovich (Ref.2) we note that the effect of the different disturbing factors can be evaluated separately. At sea, it is convenient to use an overdamped gravimeter so that λ = 10 000 - 15 000 sec^{-1} (Ref.3). In this case the oscillations of the pendulum die away quickly, i.e. $\ddot{\varepsilon}$ can be ignored and Eq.(1.11) can be substituted for Eq.(1.10). This can be illustrated

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from the solution (Eq.1.12), which, for $\lambda = 10\ 000\ \text{sec}^{-1}$, $n^2 = 100\ \text{sec}^{-2}$ gives Eq.(1.13) from Eq.(1.11), then (since $c_2 e^{-2\lambda t}$ can be ignored) gives Eq.(1.14). The replacement of Eq.(1.12) by the approximate equation (1.14) is equivalent to replacing a homogeneous equation of the second order (Eq.1.10), by a homogeneous equation of the first order (1.11). Thus the necessity is to solve the differential equations of the first order given in Eq.(1.15).

(a) The Eq.(2.1) has the solution Eq.(2.2), where the term $ce^{-n^2/2\lambda\ t}$ can be ignored for sufficiently large t. Suppose that in a time $t_1 - t_0$ the anomaly Δg is given by Eq.(2.3), where Δg_0 is the value of the anomaly at the starting point. Substituting Eq.(2.3) in Eq.(2.2) gives Eq.(2.4), which, on integrating with respect to t gives Eq.(2.5). Here

$$[\Delta g] = \frac{1}{t_1 - t_0} \int \Delta g\ dt \qquad \text{is the average value of the}$$

gravitational anomaly along the profile being investigated;

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$$[\varepsilon] = \frac{1}{t_1 - t_0} \int \varepsilon \, dt$$ is the average value for the deviation

of the pendulum in the given time period. $\delta g = \frac{2\lambda b}{n^2}$

expresses the distortion of the gravitational field. It can be shown that, if the anomalous field changes according to Eq.(2.6), then the distortion of the gravimeter readings is given by Eq.(2.7). If the distance over which measurements are made is 30 km Δg changes by 30 mgl, the ship velocity is 15 km/hr, $\lambda = 13\ 000\ \text{sec}^{-1}$, $n^2 = 100\ \text{sec}^{-2}$, then the field distortion does not exceed 1 mgl and can be ignored. Next consider the perturbing factors in $f(t)$. It is first necessary to express the component of the acceleration $\ddot{z}$ of the support along the z-axis in terms of $\ddot{X}$, $\ddot{Y}$ and $\ddot{Z}$. Eq.(2.8) is therefore obtained from Eq.(1.1). Third and fourth order components can be ignored (effect less than 1 mgl). If the time of observation is long enough, $\ddot{Z}$ can be ignored. Thus, substituting in Eq.(2.5) that $\ddot{Z} = f(t)$ and integrating twice by parts gives Eq.(2.9) where $Z_K - Z_H$ is the difference in displacement at the

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beginning and end of the observation; $[\bar{Z}] = \dfrac{1}{t_1 - t_0} \displaystyle\int Z\, dt$;

Z_{cp} is an average value of Z . On inserting representative values for these quantities, it is found that the effect of $\ddot{Z}$ is less than 1 mgl. Thus excluding $\ddot{Z}$ and terms of the third and fourth orders and taking $\delta \approx \beta (\delta = \beta + 1/3 \beta^3 + ..)$ we get Eq.(2.10). For estimation of the remaining terms, it is assumed that the gravimeter is mounted in gimbals , in which case Eq.(2.11) holds. It is also assumed that X and Y are periodic of the form Eq.(2.12). These assumptions give Eq.(2.13). Taking representative values ($X_0 = Y_0 = 10$ gl ,

$n^2 = 40 \text{ sec}^{-2}$; $t_1 - t_0 = 900$ sec; $T_1 = T_2 = \dfrac{2\pi}{\omega_1} = \dfrac{2\pi}{\omega_2} = 60$ sec and

$\lambda = 15\,000 \text{ sec}^{-1}$) gives $\dfrac{\ddot{X}_0^2 + \ddot{Y}_0^2}{4g} = 50$ mgl .

This shows that terms of the second order cannot be neglected and must be investigated with long period pendulums or accelerometers.

Card 8/10 (b) Next look for the solution of Eq.(2.14). This is Eq.(2.15).

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The integral of the exponent (I) obviously satisfies

$$I \leqslant \left(\frac{g\beta_{cp}}{\lambda} + \frac{\ddot{x}_{cp}}{\lambda} + \dot{\alpha}^2_{cp} \right) t$$

Taking $\beta_{cp} = 1^\circ$, $x_{cp} = 20$ gl, $\dot{\alpha}^2_{cp} = 5$ sec^{-2}, $n^2 = 100$ sec^{-2},

$\lambda = 1$ cm , we find that $I \leqslant \frac{n^2}{4\lambda} t$, which gives Eq.(2.16)

instead of Eq.(2.15). This shows that the result is neglig-
ible for large enough t (i.e. $f_2(t)\varepsilon$ can be ignored).

(c) The solution of Eq.(2.17) has the form Eq.(2.18) from
which it is obvious that $f_z(\varepsilon)$ can be ignored. It can

thus be seen that in measurements of the gravitational field
at sea, it is best to use an overdamped system with a pen-
dulum close to the horizontal. In this case many disturbing
factors are small and can be ignored. They can be further
diminished by using two oppositely directed pendulums. The

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pendulum readings must be corrected for the squares of the
angles α and β of the inclination of the support and
for the horizontal accelerations $\ddot{X}$ and $\ddot{Y}$. In this
connection it is necessary to use long period pendulums and
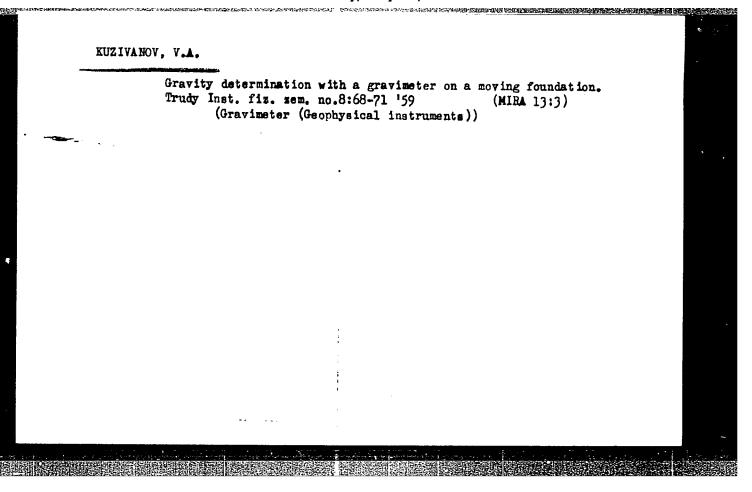vertical and horizontal accelerometers. There are 2 figures
and 3 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Institut Fiziki Zemli (Academy of
Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: March 1, 1957.

1. Gravity—Measurement

Card 10/10

KUZIVANOV, V.A.

Gravity determination with a gravimeter on a moving foundation.
Trudy Inst. fiz. zem. no.8:68-71 '59   (MIRA 13:3)
    (Gravimeter (Geophysical instruments))

BEREZIN, E.M.;KUZIVANOV, V.A.

Nomograms for determining corrections for the amplitude, temperature, depth of submersion, the Eotvos effect and for determining the co- efficient of swaying in pendulum observations at sea. Trudy Inst. fiz. zem. no.8:72-79 '59   (MIRA 13:3)
          (Nomography (Mathematics)) (Pendulum)

S/154/60/000/02/09/018
B012/B123

AUTHORS: Kuzivanov, V. A., Sagitov, M. U.

TITLE: On the Impossibility of Determining the Geoid Figure by
              Means of Gravimetric and Geodetic Data Only

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i
              aerofotos"yemka, 1960, No. 2, pp. 89-93

TEXT: The authors discuss the opinion of A. K. Malovichko, according to
whom the space between the physical earth surface and the geoid can al-
ways be regarded as being free of mass. The effect of these masses is
substituted by some fictitious masses, situated below the geoid in such
a way that the gravitational fields outside the physical earth surface
suffer no distortion. Fig. 1 shows the scheme of Poincaré. The authors
conclude that it is impossible not to speak of a field distortion outside
the surface. In Fig. 2 an example is given, according to which an insig-
nificant change of the gravitational field outside the physical earth
surface leads to absolutely different results when analytically shifted
downward. Therefrom follows that analytical shifting of the potential

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On the Impossibility of Determining the   S/154/60/000/02/09/018
Geoid Figure by Means of Gravimetric and   B012/B123
Geodetic Data Only

into regions below the earth surface is usually unsatisfactory. The problem of determining the figure of the earth on the basis of geodetic data and data of the outer gravitational field only was solved by M. S. Molodenskiy. Finally, the authors mention the proposal of A. K. Malovichko to reduce the gravitational anomaly Δg, measured on the earth surface S, to an auxiliary plane σ (equation (1)). This formula is criticized and substituted by equation (2). Comparing equations (1) and (2) one sees that the first one is only an approximation of the second one. Consequently, it is applicable only in an undisturbed relief. In mountainous terrain one has to use equation (2). The theorem of Kosha-Kovalevskaya is mentioned. There are 2 figures and 8 references: 7 Soviet and 1 Japanese.

ASSOCIATION: Institut fiziki Zemli AN SSSR (Institute of Physics of the Earth of the AS USSR), Kuzivanov, V. A.; Gosudarstvennyy astronomicheskiy institut imeni Shtenberga (State Institute of Astronomy imeni Shtenberg), Sagitov, M. U.

SUBMITTED: May 19, 1959

Card 2/2

S/035/62/000/003/047/053
A001/A101

AUTHORS:1   Kuzivanov, V. A., Popov, Ye. I.

TITLE: Processing of marine observations with strongly damped gravimeters
            ("perezagashennyye" gravimetry)

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 3, 1962, 32,
            abstract 3G220 (V sb. "Morsk. gravimetr. issledovaniya", no. 1,
            Moscow, Mosk. un-t, 1961, 100-108)

TEXT: The authors describe the method of processing marine observations
with strongly damped gravimeters (RZhAstr, 1957, no. 6, 5178). There exist in
the USSR two designs of marine gravimeters with strongly damped quartz systems:
one was developed in the VNIIGeofizika (see 3G219) and the other, which was
named ГАЛ (GAL), in the Institute of Physics of Earth, AS USSR (RZhAstr, 1960,
no. 6, 5765; no. 7, 7088). Practical indications are given on deciphering
readings of gravimeters on a photogram, on taking into account distortions
caused by strong damping, and taking into account the effect of perturbing
vertical and horizontal accelerations, zero-point drift and Eötvös effect.
                                                    P. Shokin
[Abstracter's note: Complete translation]

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S/035/62/000/003/048/053
A001/A101

AUTHORS: Kuzivanov, V. A., Gaynanov, A. G.

TITLE: On measuring magnetic field while carrying out marine pendulum observations

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 3, 1962, 32, abstract 3G221 (V sb. "Morsk. gravimetr. issledovaniya", no. 1, Moscow, Mosk. un-t, 1961, 109-111)

TEXT: It was discovered at the starting point of the marine gravimetric expedition of GAISh (see 3G219) in 1957 that, in observations with a marine six-pendulum instrument, the unit of accelerometers with strong magnetic dampers creates magnetic fields up to 10 oe near the invar heads of the TsNIIGAiK quartz-metallic pendulums. This led to a change in the oscillation period of several TsNIIGAiK quartz-metallic pendulums up to 110 x 10^{-7} sec ($\sim$ 45 mgal). It is necessary to determine admissible strengths of magnetic field while using these pendulums, and in the field observations with pendulum instruments to observe that the magnetic field should not exceed admissible limits. A device widely used in practice of magnetometric studies is recommended for approximate

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On measuring magnetic field ...

S/035/62/000/003/048/053
A001/A101

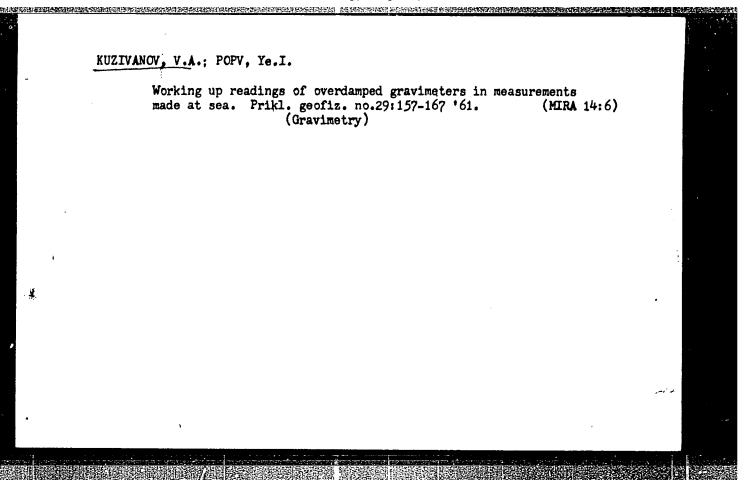($\pm$ 10 - 15%) determination of components H and Z of the magnetic field. The device is described which contains compass pointer, conventional compass and electromagnet, and whose constants are determined by means of a Helmholtz coil.

P. Shokin

[Abstracter's note: Complete translation]

Card 2/2

KUZIVANOV, V.A.; POPOV, Ye.I.

Processing marine observations with overdamped gravimeters.
Mor.grav.issl. no.1:100-108 '61.   (MIRA 15:12)
                    (Gravimetry)

KUZIVANOV, V.A.; POPV, Ye.I.

Working up readings of overdamped gravimeters in measurements
made at sea. Prikl. geofiz. no.29:157-167 '61.   (MIRA 14:6)
(Gravimetry)

KUZIVANOV, V. A. (Moszkva); SZAGITOV, M. U. [Sagitov, M. U.] (Moszkva);
BITO, Janos [translator]

Development of the principles of Lorand Eotvos in the field
of gravimetry in the Soviet Union. Fiz szemle 14 no. 2: 58-
61 F '64.

L 14494-66   EWT(1)   GS/GW

ACC NR: AT6006265   SOURCE CODE: UR/0000/65/000/000/0118/0120

AUTHOR: Avsyuk, Yu. N.; Kuzivanov, V. A.

ORG: none

TITLE: Experiment in detailed gravimetric surveying at sea

SOURCE: AN SSSR. Institut fiziki Zemli. Apparatura i metody morskikh gravimetri-cheskikh nablyudeniy (Apparatus and methods of marine gravimetric observations). Moscow, Izd-vo Nauka, 1965, 118-120

TOPIC TAGS: survey ship, gravimetry, oceanic gravimetry, gravimeter

ABSTRACT: The paper is a report on a small-scale maritime gravimetric mapping ex-pedition organized in 1963 by the Institute of Physics of the Earth, AN SSSR. An area of 20 x 30 miles was gravimetrically surveyed to develop methods of observation and data analysis for detailed mapping in regions in which the gravity anomalies varied from 1 to 20 mgal/mile. Two types of gravimeter were used for the observa-tions: two GAL-S with scale divisions of 15 and 12 mgal/mm, and the Graf with scale divisions of 3 and 2.7 mgal/mm. An experimental model of a string gravimeter was also used. The readings of the GAL-S gravimeters were recorded on photographic film, while those of the Graf instrument were potentiometrically recorded on a paper chart. All instruments were mounted in Cardan suspensions. The observations were made at a depth of 80 m and a speed of 3 knots. The readings were corrected

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